

FIG.1

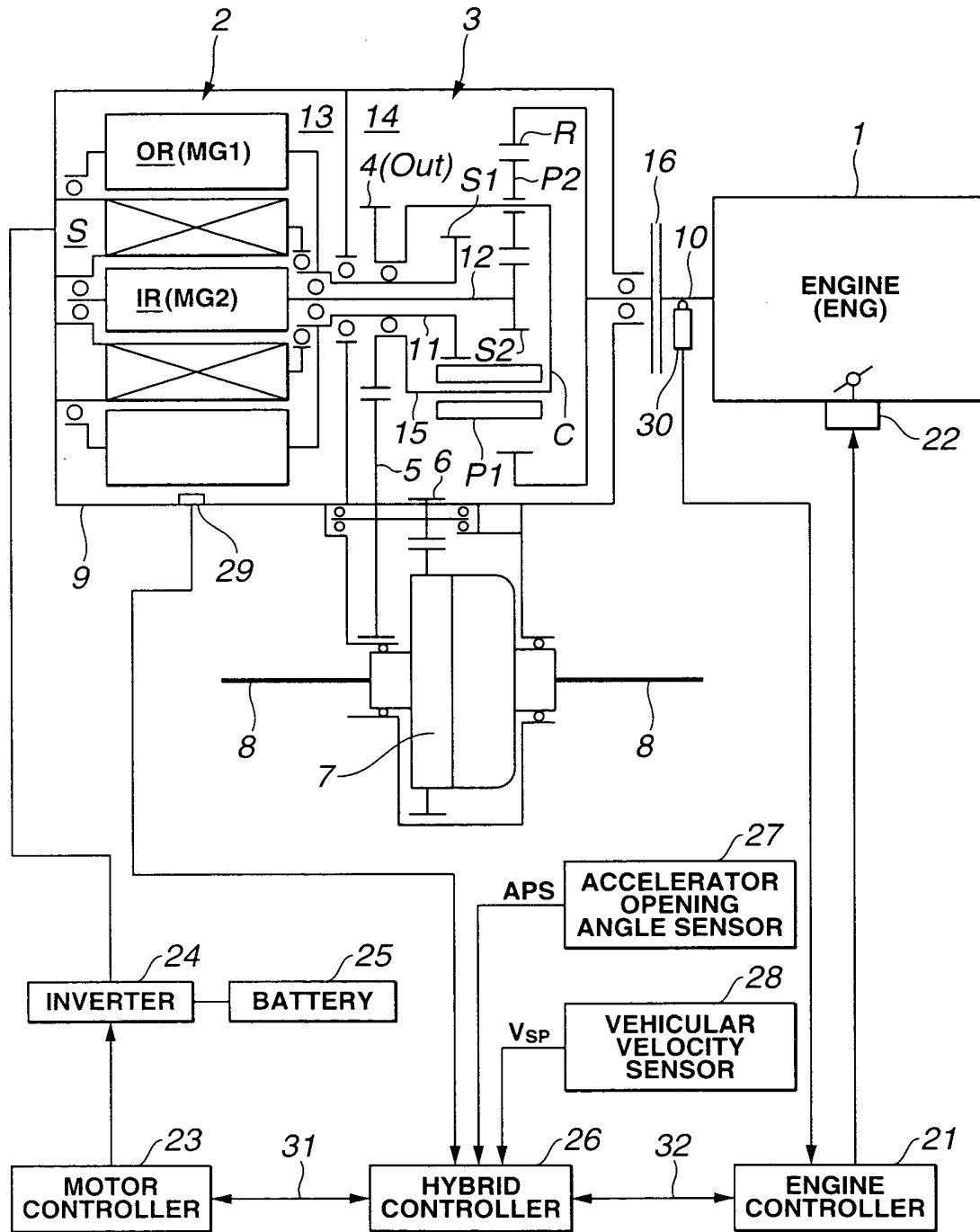


FIG.2

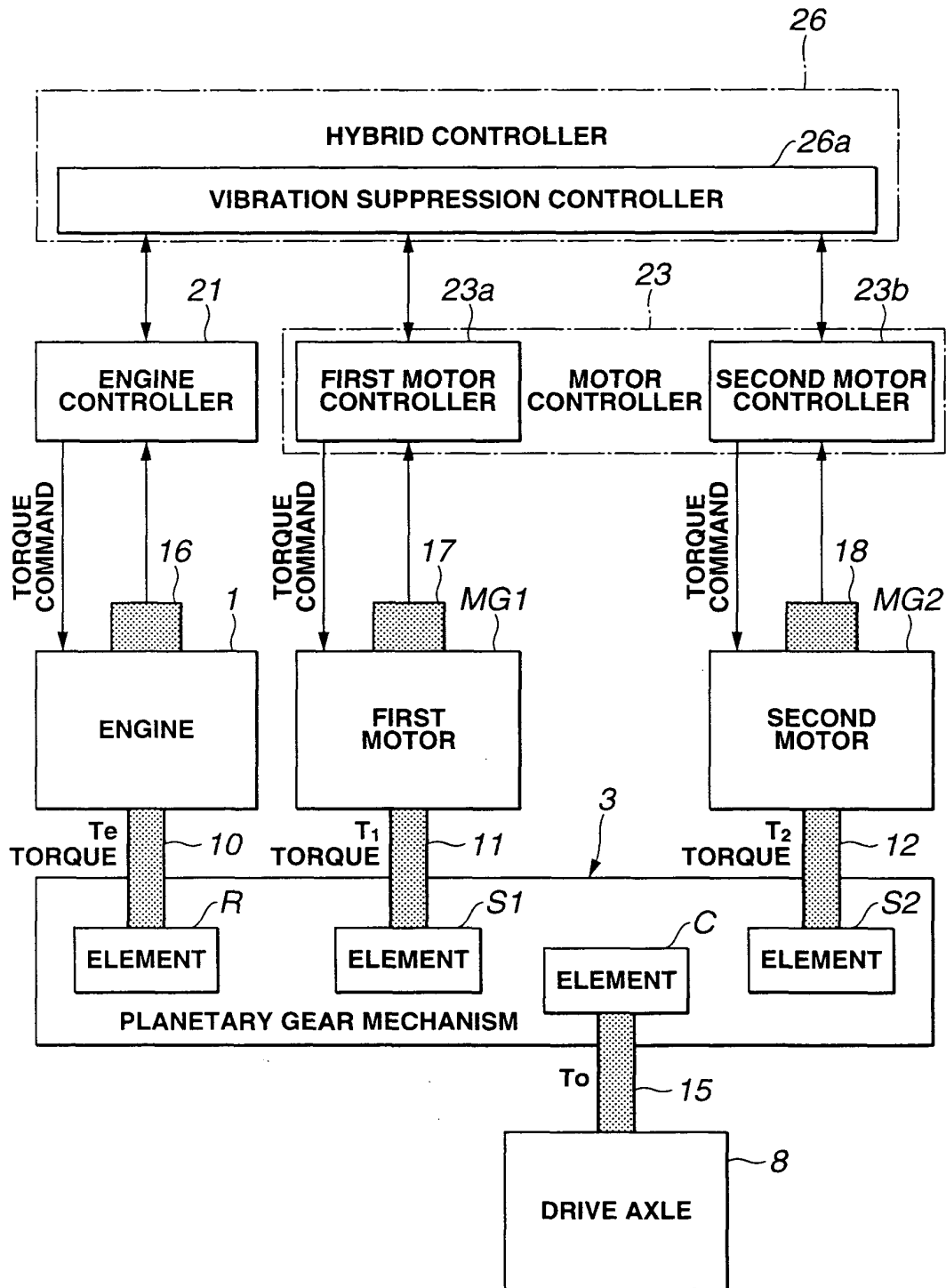


FIG.3

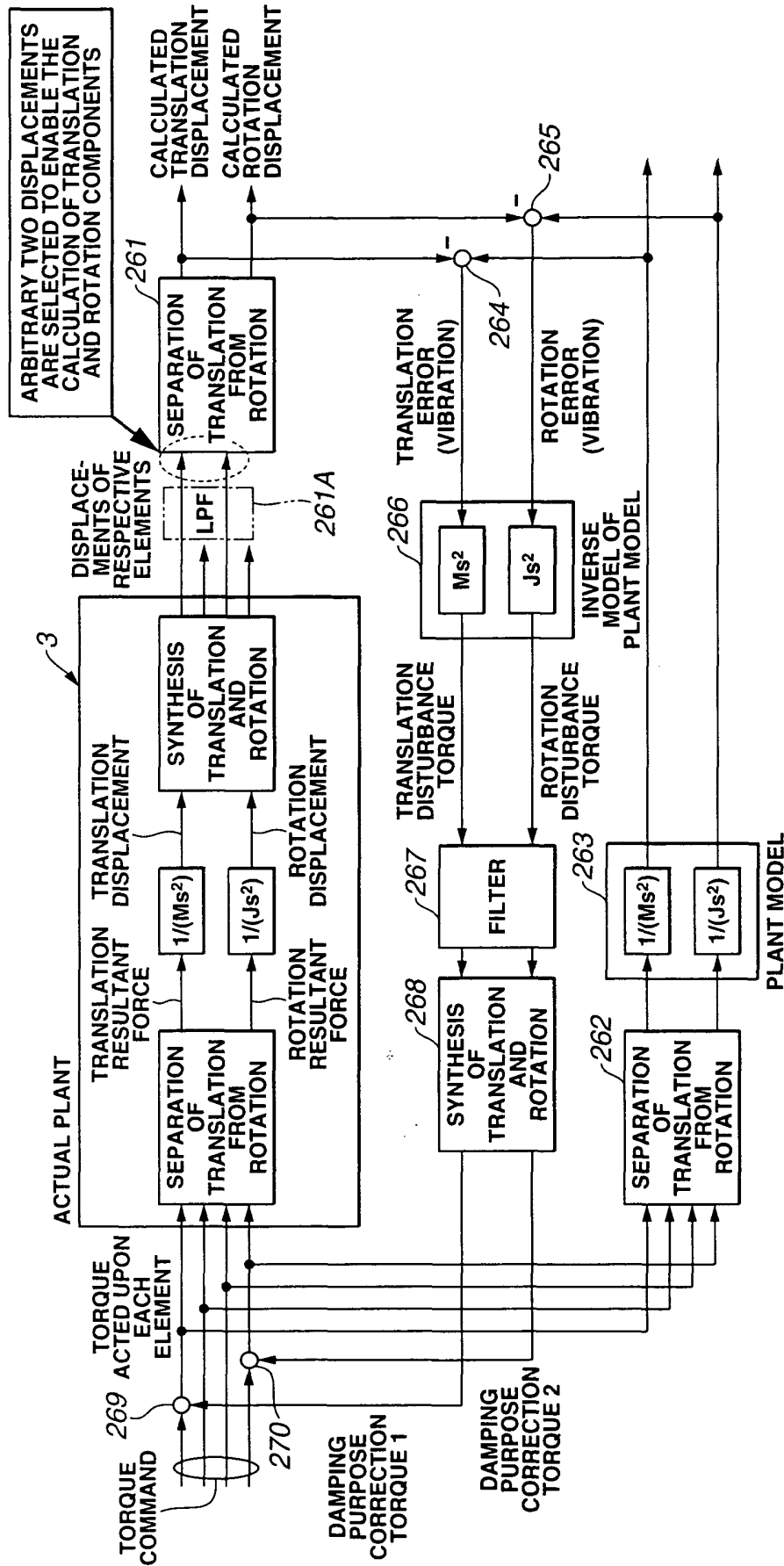


FIG.4

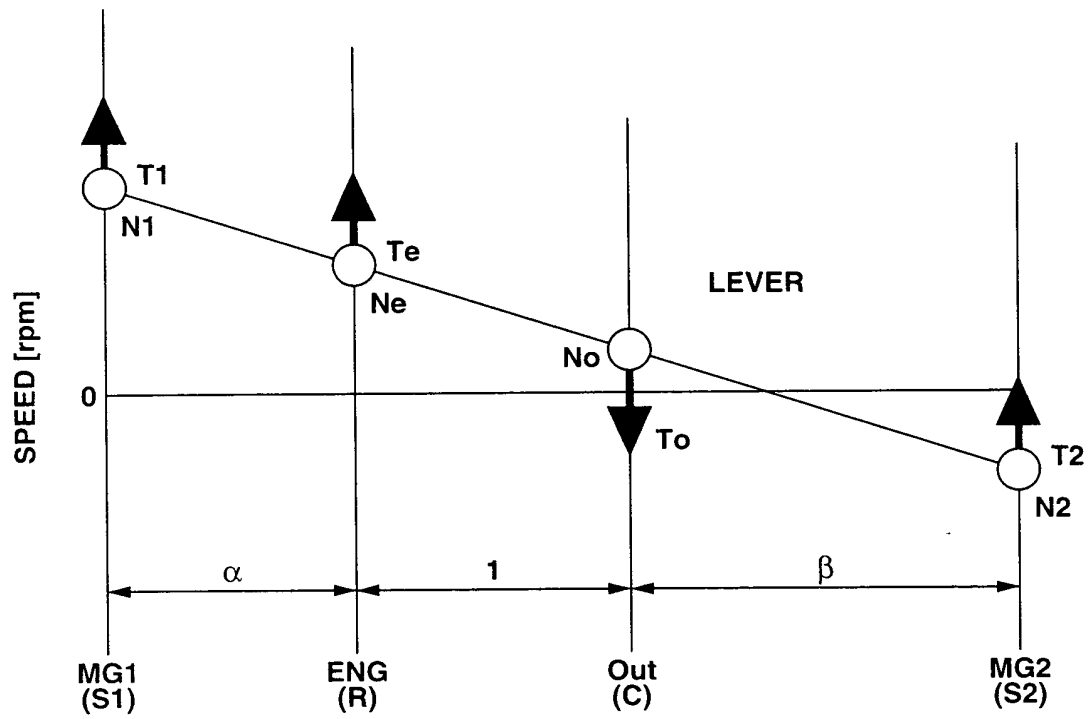
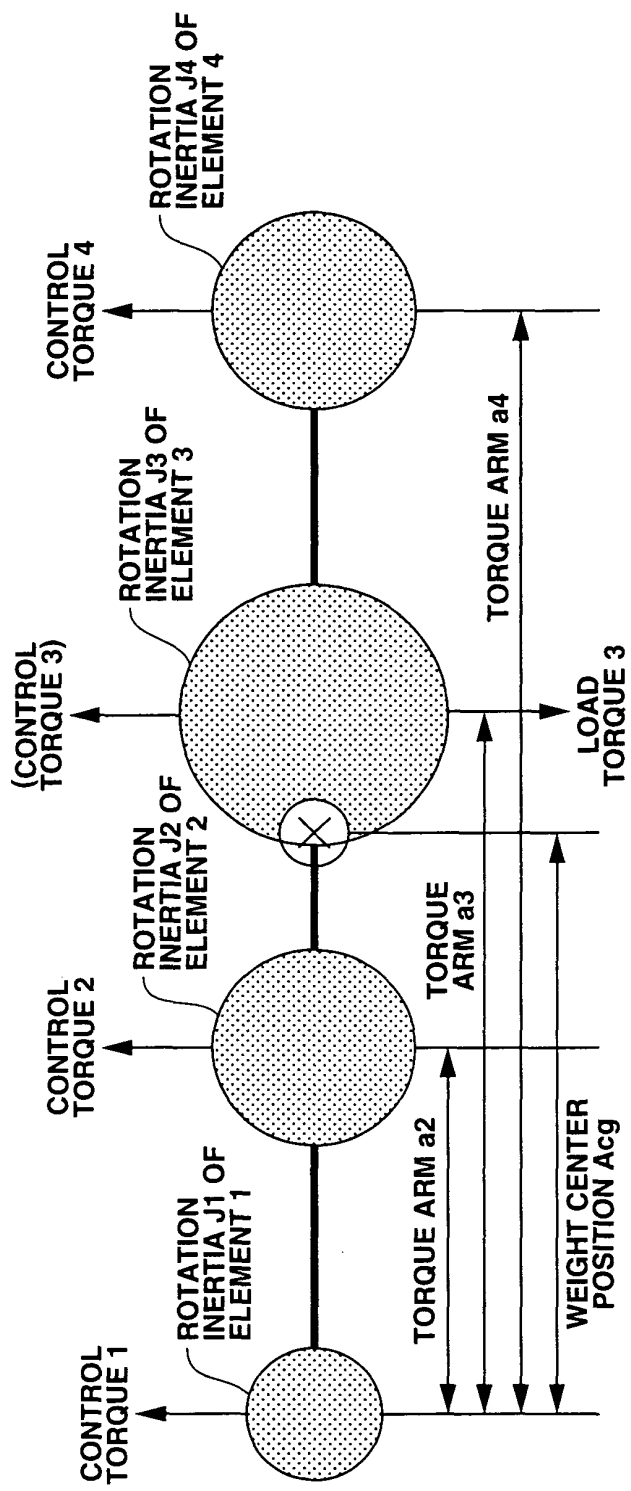


FIG.5



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graph TD
    START([START]) --> S2
    subgraph S2 [S2]
        S2_TEXT["CALCULATE TRANSLATION TORQUE TOTAL AND ROTATION TORQUE TOTAL FROM TORQUE ACTED UPON EACH ELEMENT  
TRANSLATION TORQUE TOTAL = T1 + T2 - TL3 + T4  
ROTATION TORQUE TOTAL = T1Acg + T2(Acg - a2) - TL3(Acg - a3) + T4(Acg - a4)"]
    end
    S2 --> S3
    subgraph S3 [S3]
        S3_TEXT["DERIVE TRANSLATION AND ROTATION DISPLACEMENTS WITH TRANSLATION TORQUE AND ROTATION TORQUE TOTALS AS INPUTS OF PLANT MODEL  
TRANSLATION DISPLACEMENT = ∫(TRANSLATION TORQUE TOTAL / M)dt  
ROTATION DISPLACEMENT = ∫(ROTATION TORQUE TOTAL / J)dt  
(FOR M AND J, REFER TO Figs. 3 AND 5)"]
    end
    S3 --> S1
    subgraph S1 [S1]
        S1_TEXT["CALCULATE TRANSLATION DISPLACEMENT AND ROTATION DISPLACEMENT OF THE ACTUAL PLANT FROM AT LEAST TWO MEASURED VALUES (x1, x2) OF THE DISPLACEMENT IN EACH ELEMENT. SUPPOSE THAT TORQUE ARMS FROM THE WEIGHT CENTER ARE SUPPOSED TO BE a AND b.  
TRANSLATION DISPLACEMENT ROTATION DISPLACEMENT = [ 1 a ]⁻¹ [ x1 ] [ 1 -b ] [ x2 ]"]
    end
    S1 --> END((1))

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FIG.6B

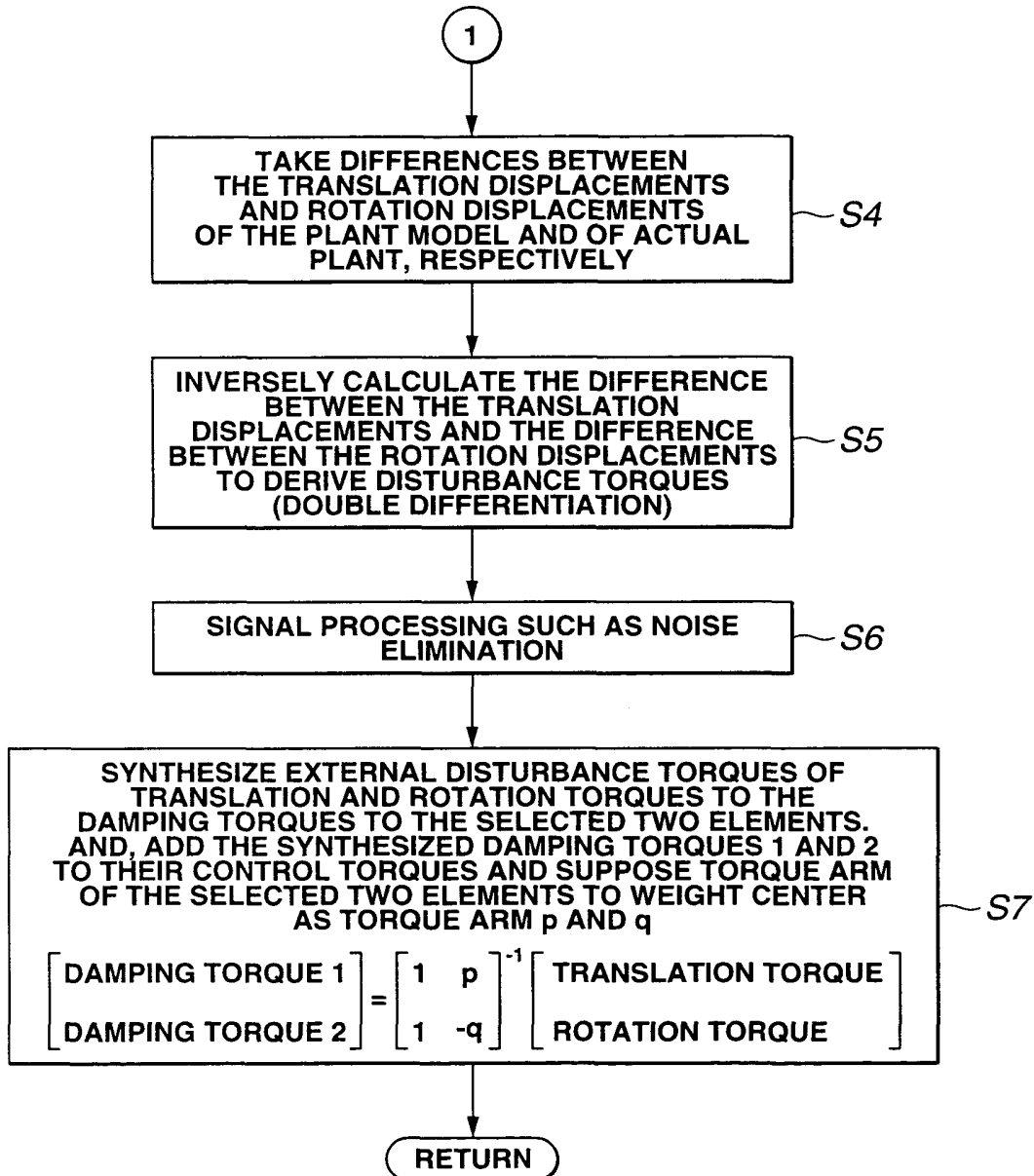


FIG.7

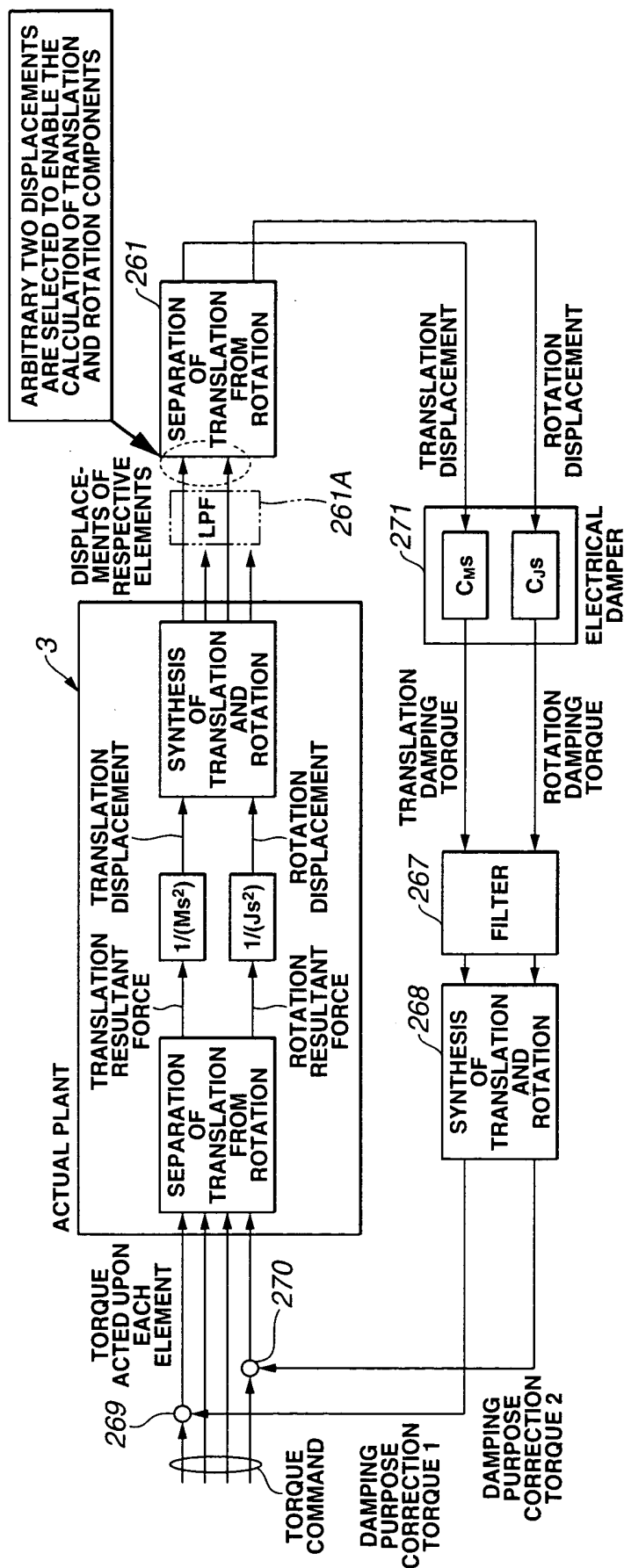


FIG.8

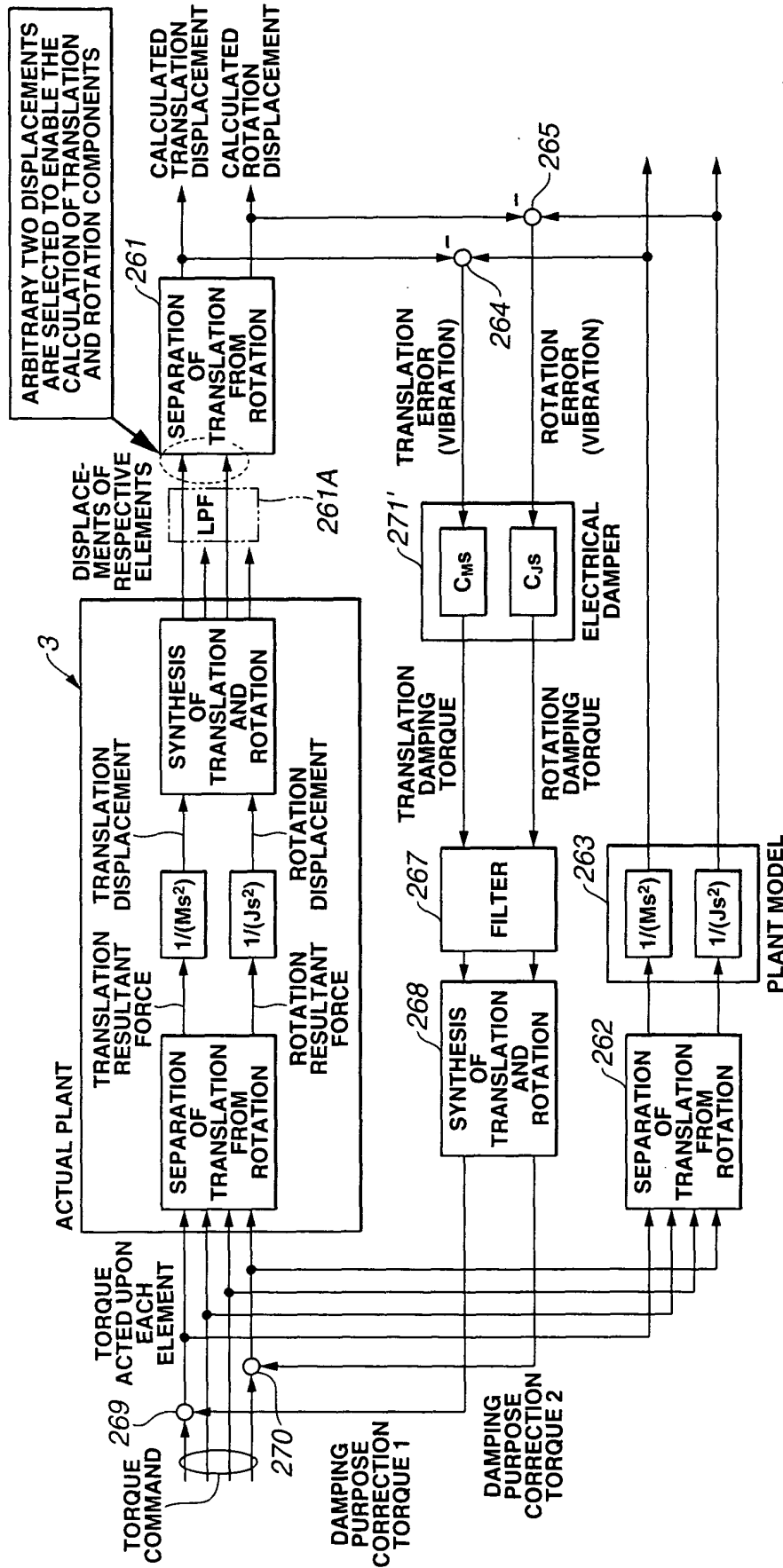


FIG.9

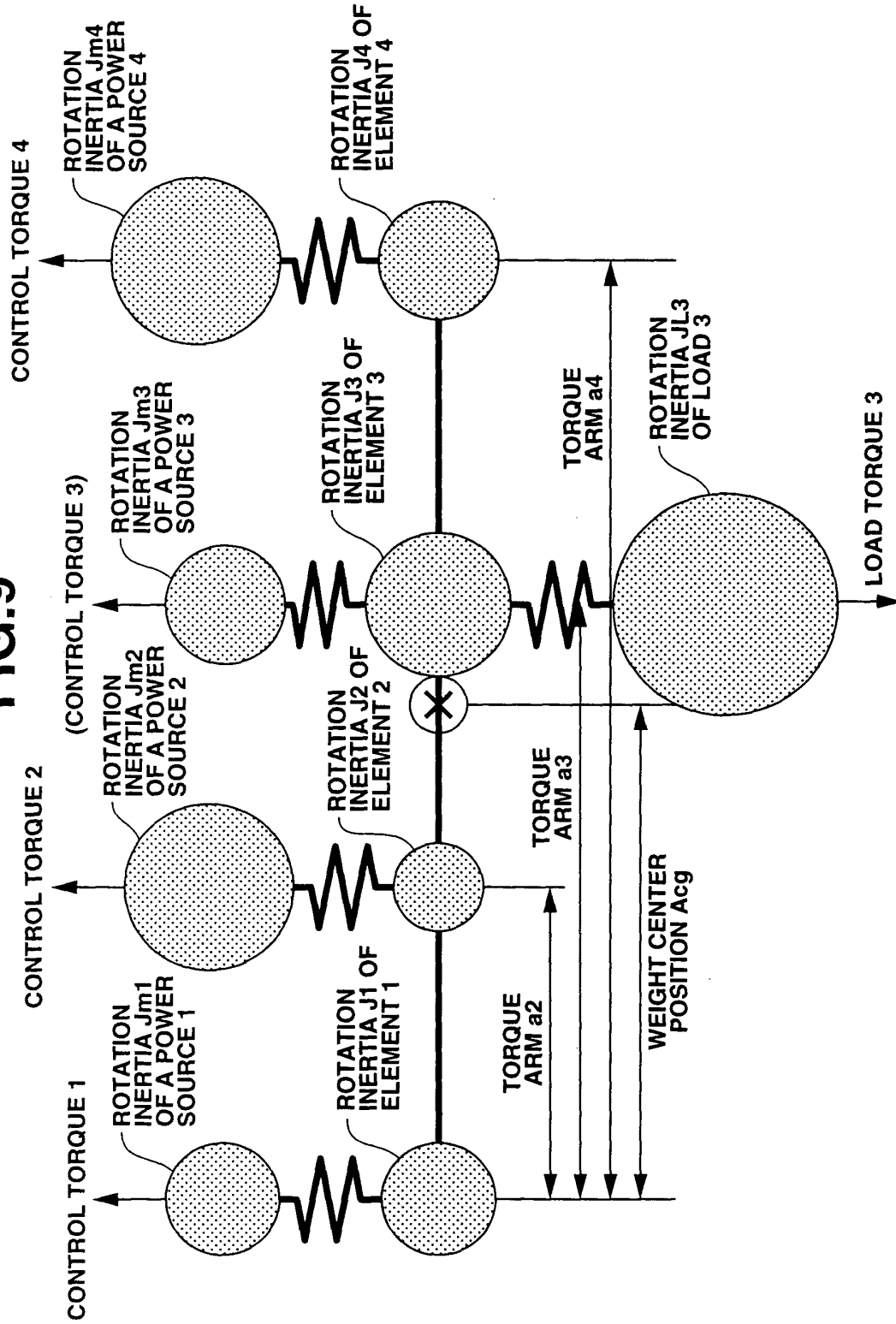
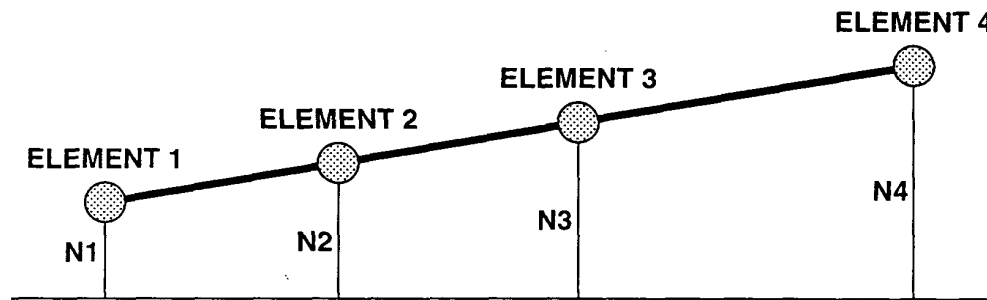


FIG.10



FOUR-ELEMENT PLANETARY GEAR MECHANISM